

REMARKS

Claims 22, 25, and 28-55 are pending, with claims 22, 25, 28, 29, and 49 being independent. Claims 28-51 have been allowed. Claims 22 and 25 have been amended. Support for the amendment is found in the specification at, for example, paragraphs [0057], [0064], [0065], and [0080], and FIG. 2. No new matter has been introduced.

Allowable Subject Matter

Claims 28-51 have been allowed. This indication of allowed subject matter is acknowledged.

35 U.S.C. § 112

Claims 22, 25, and 52-55 have been rejected under 35 U.S.C. § 112, 1st paragraph, as not being enabled by the disclosure because they do not recite the essential step of forming a film in the chamber. Amendments to the claims obviate these rejections. Specifically, as amended, claim 22 recites, in part, “simultaneously evaporating a first organic compound from the first evaporation source and a second organic compound from the second evaporation source in the film formation chamber, and activating the first organic compound evaporated from the first evaporation source and the second organic compound evaporated from the second evaporation source by irradiation with light in the film formation chamber so that an organic film including the first organic compound and the second organic compound is formed over a substrate.” Claim 25 has been similarly amended. Accordingly, applicants request withdrawal of the rejection under 35 U.S.C. § 112, 1st paragraph, of claims 22 and 25, and their dependent claims, be withdrawn.

35 U.S.C. § 103

Claims 22, 52, and 54 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishihara (U.S. Patent No. 4,717,585) in view of Ichikawa (U.S. Patent No. 6,022,458). Claims 25, 53 and 55 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishihara in view of Ichikawa, and further in view of Goldman (U.S. Patent No. 5,039,657) and Ohmi (U.S. Patent No. 6,215,806). Amendments to the claims obviate the rejections, as explained below.

The proposed combination of Ishihara and Ichikawa does not describe or suggest all the features of amended claim 22. In this regard, Ishihara teaches a process for forming a deposited film on a substrate. *Ishihara*, Abstract. To form the deposited film, Ishihara describes introducing an active species (A), and an active species (B) into a deposition space. *Id.*, col. 2, lines 25-29. Ishihara further describes permitting both the species to chemically react with each other to form a deposited film on the substrate. *Id.*, col. 2, lines 32-35.

Ishihara does not describe or suggest “simultaneously evaporating a first organic compound from a first evaporation source and a second organic compound from a second evaporation source in the film formation chamber,” as recited in amended claim 22. The cited portions of Ishihara (col. 13, line 45 – col. 4, line 52, and FIGS. 3-4) describe a film forming chamber 101 that includes a desired substrate 103 placed on a substrate support 102, and a heater 104 used for heating the substrate. Further, Ishihara states “Gas sources 106 to 109 are suitably provided according to the species of a gas of film forming materials ... In each of said gas supply systems 106-109, there are provided a branched pipe a, a flow meter b, a pressure gauge c ..., and flow rate regulating valves d, e.” To generate the active species (A) and (B), Ishihara describes an activation chamber 112 and an activation chamber 123. As shown in Ishihara’s FIG. 3, both of Ishihara’s activation chambers are positioned outside the film forming chamber 101, and the active species formed in the activation chambers are introduced into the film forming chamber 101 through pipes 116 and 124.

The Office asserts that Ishihara’s gas sources are the evaporation sources recited in claim 22. *Office Action*, page 2, 4th paragraph. Applicants respectfully

disagree because Ishihara does not describe or suggest evaporating an organic compound from the gas source. Instead, Ishihara's gas sources 106 and 109 are provided to transport a species of a gas of film forming material into Ishihara's film forming chamber 101. *Ishihara*, col. 13, lines 60-64. In contrast, as recited in amended claim 22, a first organic compound and a second organic compound are simultaneously evaporated from a first evaporation source and a second evaporation source, respectively. Because Ishihara's gas sources do not evaporate organic compounds, they are not the evaporation sources recited in claim 22. Further, as recited in claim 22, the organic compounds are simultaneously evaporated from the evaporation sources in the film formation chamber. Ishihara does not describe or suggest that the gas sources are in the film forming chamber 101. Rather, Ishihara's gas sources only transport gases to the film forming chamber 101. For these additional reasons, Ishihara's gas sources are not the evaporation sources recited in claim 22.

Further, Ishihara does not teach "activating the first organic compound evaporated from the first evaporation source and the second organic compound evaporated from the second evaporation source by irradiation with light in the film formation chamber," as recited in amended claim 22. In this regard, Ishihara describes forming activation species (A) and (B) in activation spaces (A) and (B), respectively using, for example, optical energies. See col. 8, line 63 – col. 9, line 2. Further, to form the active species (A), Ishihara describes introducing a compound containing carbon and halogen, and a compound containing silicon and halogen into activation space (A), and decomposing these compounds through the action of discharging energy or light energy to form active species (A). See col. 11, line 64 – col. 12, line 3. Thus, Ishihara describes using light energy to produce the active species (A) and (B).

However, Ishihara describes forming the active species (A) and (B) in a space that is different from the film forming chamber. In this regard, Ishihara states:

One of the points in which the process of the present invention is different from the CVD process ... is to use active species obtained by being previously activated in a space different from the film forming space (hereinafter referred to as activation space). (Emphasis added).
Id., col. 2, lines 63-66.

Because Ishihara describes forming the active species in a space different from the film forming space, Ishihara does not describe or suggest using light energy in the film forming space. Therefore, Ishihara does not describe “activating the first organic compound evaporated from the first evaporation source and the second organic compound evaporated from the second evaporation source by irradiation with light in the film formation chamber,” as recited in amended claim 22.

Furthermore, the Office acknowledges that Ishihara does not disclose “wherein a surface of an inner wall of the film formation chamber is electrolytic polished, and wherein the film formation chamber is connected with first exhaust means and second exhaust means,” as recited in amended claim 22. *Office Action*, page 4, 2nd paragraph. Consequently, Ishihara does not describe or suggest all the features of claim 22.

Ichikawa does not remedy the deficiencies of Ishihara because no portion of Ichikawa describes or suggests “simultaneously evaporating a first organic compound from a first evaporation source and a second organic compound from a second evaporation source in the film formation chamber, and activating the first organic compound evaporated from the first evaporation source and the second organic compound evaporated from the second evaporation source by irradiation with light in the film formation chamber so that an organic film including the first organic compound and the second organic compound is formed over a substrate,” as recited in amended claim 22. Accordingly, claim 22 and all claims dependent therefrom are patentable.

Claim 25 and all claims dependent therefrom are also patentable at least for reasons similar to claim 22, and also because Goldman and Ohmi do not remedy the failure of Ishihara and Ichikawa to describe or suggest the subject matter recited in the claims.

Applicants respectfully request reconsideration and allowance of the above-referenced application.

CONCLUSION

It is believed that all of the pending issues have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement

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with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this reply should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this reply, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

A Request for Continued Examination (RCE) is being filed concurrently with this response. Please apply the RCE fee and other charges or credits, if any, to deposit account 06-1050.

Respectfully submitted,

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